

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference CO/mc/1945	FOR FURTHER ACTION		See item 4 below
International application No. PCT/EP2004/006605	International filing date (<i>day/month/year</i>) 18 June 2004 (18.06.2004)	Priority date (<i>day/month/year</i>) 24 July 2003 (24.07.2003)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant TECNOS S.P.A.			

- This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).
- This REPORT consists of a total of 8 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.
- This report contains indications relating to the following items:

<input checked="" type="checkbox"/> Box No. I	Basis of the report
<input checked="" type="checkbox"/> Box No. II	Priority
<input type="checkbox"/> Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/> Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/> Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/> Box No. VI	Certain documents cited
<input checked="" type="checkbox"/> Box No. VII	Certain defects in the international application
<input checked="" type="checkbox"/> Box No. VIII	Certain observations on the international application
- The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 740 14 35	Date of issuance of this report 30 January 2006 (30.01.2006)
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PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.1)

Date of mailing

(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION

See paragraph 2 below

International application No.
PCT/EP2004/006605

International filing date (day/month/year)
18.06.2004

Priority date (day/month/year)
24.07.2003

International Patent Classification (IPC) or both national classification and IPC
B29C51/26

Applicant
TECNOS S.P.A.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/EP2004/006605

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/EP2004/006605

Box No. II Priority

1. ☒ The following document has not been furnished:

- ☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).
- ☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	4, 5, 10, 11, 16
	No: Claims	1, 2, 3, 6-9, 12-15
Inventive step (IS)	Yes: Claims	
	No: Claims	1-16
Industrial applicability (IA)	Yes: Claims	1-16
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V.

1. The following documents are referred to in this communication:

D1 : DE-A-24 18 445
D2 : DE-A-25 08 529
D3 : DE-A-21 38 112
D4 : DE-B-26 30 021

2. The following is stated under reference to paragraph **Re Item VIII** of this written opinion.

- 2.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of **claim 1 is not new** in the sense of Article 33(2) PCT. Document D1 discloses (the references in parenthesis applying to this document): A method for the manufacture of thermoformed bodies, according to which a sheet (5) of thermoformable plastic material is heated to a plasticizing temperature (page 3, line 3), subsequently causing it to adhere to a shaping surface of a mold (11), comprising the steps of:

- heating the sheet material (5) to a plasticizing temperature, maintaining it in a suspended condition (figure 1), held along its peripheral edges (figure 1);
- causing an enrichment of material by pre-shaping the heated sheet (5) of plastic material, at least partially conforming it to a shaping of the mold (11), by performing relative movements of at least part of the peripheral edges of the sheet (5), cf. figure 2 with page 2, paragraph 3 - page 2, line 3;
- bringing the heated and pre-shaped sheet (5) into an aligned condition with the mold (11), and vacuum forming said pre-shaped sheet (5), making it adhere to the shaping surface of the mold (11), cf. figure 3 and page 3.

- 2.2 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of **claim 8 is not new** in the sense of Article 33(2) PCT. Document D1 discloses (the references in parenthesis applying to this document): An apparatus for the manufacture of thermoformed bodies, from a sheet of plastic material (5), comprising:

- a thermoforming mold (11) having a sheet shaping surface (figure 1);
- a movable sheet clamping frame (6) for holding the sheet (5), said clamping frame (6) peripherally extending around the mold (11), and
- clamping means (page 5, line 5) for gripping the peripheral edges of the sheet (5) along at least part of the sides of the clamping frame (6)

- the apparatus also comprises support means (8) for supporting the clamping frame (6), said support means (8) being positioned and conformed to move the clamping frame (6) between a raised and a lowered position with respect to the mold (11);
- and in which the clamping frame (6) has a geometrically variable shape providing at least a first and a second frame portion (see figure 2, 3), movable in relation to each other;
- control means being operatively connected to said movable frame portions (6), to selectively vary their disposition in conformity with the shaping surface of the mold (11, see also page 3, paragraph 3 and page 3, lines 16-20).

3.1 **Dependent claims 2-7, 9-15** do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step (Article 33(2) and (3) PCT) the reasons are the following:

- carrying out an enrichment step of plastic sheet material causing the formation of a sag in a controlled way, cf. **claim 2**, as well as the sag is created by gravity during the heating step, cf. **claim 3**, is implicit known from document D1 since sagging of the sheet is normally happening during heating. Depending on the circumstances and the material used the sagging is normally controlled in order to avoid defective formed products.
- forming an upwardly facing sag by pneumatically supporting the sheet of material during the heating step, cf. **claim 4**, as well as pre-shaping the sheet material by a shaping plug, cf. **claim 5**, is common knowledge for the skilled man in thermoforming and applied depending on the requirements and circumstances and therefore does not involve an inventive skill.
- a variable geometry clamping frame comprising articulated and/ or longitudinally sliding frame portions, cf. **claim 6**, comprises slidable and/ or pivotally connected frame portions disposable on a same plane, **claim 12**, as well as the combination of sliding and/ or rotational movements for approaching, raising and/ or lowering the edges of the plastic sheet, cf. **claim 7**, is respectively known from documents D1, figure 3 and D2, figures 1, 2.
- that the clamping means for gripping the plastic sheet are of mechanical operated type, cf. **claim 10**, as well as they are of vacuum operated type, cf. **claim 11**, seems to be a mere choice out of several possibilities whereby the advantages of each possibility is predictable. The indication in the description of the application document page 9, lines 11 -12, "The clamping

means can be of any suitable type, for example or their combination."

gives the reader also the impression that these features are common knowledge and used depending on the circumstances. Furthermore are mechanical operated clamping means are disclosed in document D1 and vacuum operated clamping means are disclosed in document D4.

- that the vacuum operated clamping means comprises one open slot along a front side of a clamping frame, cf. **claim 13**, as well as that a clamping frame has peripheral edges provided with longitudinal slots connectable to an air suction source, cf. **claim 14**, is already disclosed in Document D4, figure 1-4 and would be easy to implement in the variable geometry clamping frames disclosed in the documents D1 or D2.
- that the geometry clamping frame conforms to the geometrical pattern of the peripheral edges of the mould, cf. **claim 15**, is already disclosed in Document D1, figure 3.

3.2 Although the structural features of **claim 16** are not disclosed by any of the prior art documents the presence of an inventive step of the subject-matter of claim 16 can at this stage not be confirmed since it does not seem to solve a technical problem and since it is not clear what kind of technical effect is achieved. Furthermore it seems just a partial of a part disclosed in document D4, figure 2 and column 3 - 4.

4. The requirement of being industrially applicable, Article 33(4) PCT is fulfilled for claims 1-17.

Re. Item VII.

1. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document D1, D2 and D4 is not mentioned in the description, nor is this document identified therein.
2. Independent claims 1, 8 are not in the two-part form in accordance with Rule 6.3(b) PCT.

Re Item VIII.

In respect of Article 6 PCT the following is observed:

1. Every independent claim must have all the essential features for defining the invention, cf. the PCT Guidelines 5.33 and 5.15, which is not the case for independent claims 1 and 8 for the following reasons:

Independent method claim 1 specifies the following technical features:

- heating the sheet,
- vacuum forming the pre-shaped sheet,

Neither these features nor corresponding technical features are contained by independent apparatus claim 8.

The same applies for certain apparatus features of claim 8 which do not have the corresponding method features namely:

- a movable sheet clamping frame for holding the sheet, said clamping frame peripherally extending around the mold, and
- clamping means for gripping the peripheral edges of the sheet along at least part of the sides of the clamping frame
- the apparatus also comprises support means (16) for supporting the clamping frame, said support means being positioned and conformed to move the clamping frame between a raised and a lowered position with respect to the mold;
- and in which the clamping frame has a geometrically variable shape providing at least a first and a second frame portion, movable in relation to each other;
- control means being operatively connected to said movable frame portions , to selectively vary their disposition in conformity with the shaping surface of the mold.

Furthermore, due to this inconsistency of the independent claims 1 and 8 it is questionable if the claims 1 and 8 are linked by a single general inventive concept (Rule 13 PCT).

2. The claims of the present PCT application furthermore do not comply with the requirements of Article 6 PCT in that they are not concise. The subject-matter of claim 9 is substantially covered by the claim 8, albeit with a slightly different wording, see also PCT Guidelines 5.15.